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REMARKS/ARGUMENTS

Claim Amendments

By the present amendment, claim 1 has been amended and claims 5, 7, and 17-20 have been cancelled. Claim 21 is new and corresponds to claim 1 where the method consists of administering an effective amount of isolated and purified soyasaponin B_b to an animal in need thereof.

The amendments have been made without prejudice and without acquiescing to any of the Examiner's objections. Applicant reserves the right to file any of the deleted subject matter in a further continuation, continuation-in-part or divisional application. No new matter has been entered by the present amendment.

The Official Action dated April 9, 2003 has been carefully considered. It is believed that the amended claims submitted herewith and the following comments represent a complete response to the Examiner's rejections and place the present application in condition for allowance. Reconsideration is respectfully requested.

Claim Objections

The Examiner has objected to claims 5 and 7 because they are substantial duplications and has requested that one of these claims be cancelled. In response, and to advance prosecution, the Applicants have cancelled claims 5 and 7 without prejudice which overcomes this rejection. The Applicants reserve the right to pursue these claims in a divisional application.

In light of the above amendment, the Applicants request that the Examiner's informality objection to claims 5 and 7 be withdrawn.

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35 USC §112, Second Paragraph

The Examiner has rejected claims 19 and 20 under 35 USC §112, second paragraph, as being indefinite. The Examiner contends that claims 19 and 20, which depend on claims 5 and 7 respectively, and specify that the kidney disease is polycystic kidney disease, are indefinite because they fail to further limit claims 5 and 7. In response, and to advance prosecution, the Applicants have cancelled claims 19 and 20 without prejudice which overcomes this rejection. The Applicants reserve the right to pursue these claims in a divisional application.

In light of the above amendments and arguments, the Applicants respectfully request that the Examiner's objections to claims 19 and 20 under 35 USC §112, second paragraph, be withdrawn.

35 USC §102(b): Anticipation

The Applicants acknowledge and appreciate the Examiner's withdrawal of his rejection of claims 1-3 under 35 U.S.C. 102(b) as being anticipated by Philbrick *et al.* (J. Am. Soc. Nephrol., Vol. 10, Sept. 1999, pp 85A).

35 USC §103(a): Obviousness

Claims 1, 2 and 16 have been rejected under 35 USC §103(a) as being obvious in light of Philbrick *et al.* (J. Am. Soc. Nephrol., Vol. 10, Sept. 1999, pp 85A, mailed to the subscribers on August 26, 1999, hereinafter Philbrick). The Examiner contends that Philbrick discloses the reduction of cyst volume in polycystic kidney disease for mice fed with an extract containing group B soyasaponins. The Examiner further contends that, even though Philbrick does not teach a specific soyasaponin B to be the active ingredient in the extract, it would have been obvious person skilled in the art to treat polycystic kidney disease using soyasaponin B_b since soyasaponin B_b is present in the extract of Philbrick. The Applicants disagree with the Examiner for the reasons that follow.

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The Applicants submit that at the time the present application was filed, it would not have been obvious to a person skilled in the art that Soyasaponin B_b was indeed the active component in the extract reported in Philbrick. Many types of saponins are present in soybean seeds. As reported in Shiraiwa et al. (Shiraiwa, M., Harada, K. and Okubo, K. Composition and content of saponins in soybean seed according to variety, cultivation year and maturity. Agric. Biol. Chem., **55** (2), 323-331, 1991, copy provided in the supplemental IDS enclosed herewith), who studied the composition and content of over 450 varieties of soybean for their content and chemical composition of saponins, there are three types of saponins: Group "A" glycosides based on the triterpene alcohol soyasapogenol A; Group "B" glycosides based on soyasapogenol B; and Group "E" glycosides which are unstable and the precursors of Group "B" saponins. In Shiraiwa et al. (Shiraiwa, M., Kudo, S., Shimoyamada, M., Harada, K and Okubo, K. Composition and structure of "Group A Saponin" in soybean seed. Agric. Biol. Chem., **55** (2), 315-322, 1991, copy provided in the supplemental IDS enclosed herewith) the composition and structure of soybean saponins were examined and six different components of the group A type, namely Soyasaponin A_a, A_b, A_c, A_d, A_e, and A_f were reported. This is in addition to the six components of the group B type, including Soyasaponin B_a, B_b, $B_{b'}$, B_c, B_d, and B_e, reported and characterized by Shiraiwa et al. in Shiraiwa, M., Harada, K. and Okubo, K. Composition and structure of "Group B Saponin in soybean seed. Agric. Biol. Chem., **55** (4), 911-917, 1991 (copy provided in the supplemental IDS enclosed herewith). The technology claimed in the present application allows for the efficient separation of Group B saponins from isoflavone derivatives co-extracted. Other than the improved procedures outlined in this patent technology, there are still no practical ways of preparing sufficient amounts of these components to conduct animal trials. The Philbrick abstract did not described any methods for the isolation and purification of soyasaponins.

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The Saponin-Enriched Alcohol Extract (SEAE) from the soy protein isolate (SPI) described in Philbrick was obtained, with minor variation, using the general procedure of Shiraiwa for the extraction and concentration of soyasaponins from soybeans. One skilled in the art would therefore anticipate that this extract would contain all 12 of the above soyasaponins from Group A and B. No effort was made to identify all the saponins in this extract. Importantly, the content of Group B saponins reported in the abstract constituted only **20%** of the total material present in the extract. Further, in the Philbrick abstract it is stated that "the beneficial effects of SPI on renal growth in the *pcy* mouse may be due to the presence of soyasaponins". The context of this statement was meant to imply that isoflavones were **definitely not active** in this respect, since, as stated in the abstract, it contained "only minute amounts of isoflavones". Further, it should be noted that the Philbrick abstract did **not** state that the type of soyasaponin that may be responsible for the beneficial effect was of the B type. Accordingly, no conclusions were or may be drawn from Philbrick on the possible contribution, if any, of the Group A or Group B saponins on he cyst volume n *pcy* mice.

The present inventors have gone on to develop an efficient way to isolate and purify soyasaponin B_b and have shown it to effectively reduce cyst volume in *pcy* mice.

The Applicants have further amended claim 1 so that the method comprises administering a composition comprising an effective amount of isolated and purified soyasaponin B_b as the sole active ingredient to an animal in need thereof.

Therefore, in light of the fact that the SEAE described in Philbrick contained at least 12 different types of soyasaponins, among other ingredients, and the fact that, prior to the present application, there was a lack of efficient methods to purify significant quantities of these compounds for biological screening, it would not have been obvious to a person skilled in the art that the effects produced by the SEAE in the Philbrick abstract could eventually be ascribed to Soyasap nin B_b and therefore it would

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not have been obvious for a person skilled in the art to treat kidney disease by administering a composition comprising Soyasaponin B_b as the sole active ingredient as claimed in claim 1 and 2, dependent thereon, of the present application.

With respect to claim 16, which corresponds to claim 1 with the exception that the soyasaponin B_b is isolated using the method described and claimed in the present application, the Examiner has stated that the objections applied to claim 1 also apply in this instance since the method of isolation of a compound is not accorded patentable weight. The Applicants therefore submit that the arguments provided above for the patentability of claim 1, and claim 2 dependent thereon, also apply to claim 16.

In light of the above arguments, the Applicants request that the Examiner's rejection of claims 1, 2 and 16 under 35 USC §103 (a), be withdrawn.

The Applicants acknowledge and appreciate the Examiner's withdrawal of his objections to claims 9-12 and 14-15 under 35 USC §103(a).

Claims 5, 7 and 17-20 have been rejected under 35 USC §103(a) as being obvious in light of Philbrick in combination with Shinohara *et al.* (USPN 4,217,345) and Miyake *et al.* (USPN 4,557,927).

In response and to advance prosecution, the Applicants have cancelled claims 5, 7 and 17-20 without prejudice which overcomes this rejection. The Applicants reserve the right to pursue these claims in a divisional application.

In light of the above amendments, the Applicants request that the Examiner's rejection of claims 5, 7 and 17-20 under 35 USC §103 (a), be withdrawn.

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In view of the foregoing comments and amendments, we respectfully submit that the application is in order for allowance and early indication of that effect is respectfully requested. Should the Examiner deem it beneficial to discuss the application in greater detail, he is kindly requested to contact the undersigned by telephone at ~~(416) 957-1683~~ 519 822-5327 at his convenience.

Respectfully submitted,

Bereskin & Parr

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